of our knowledge there is nothing that would preclude the idea that this improved nutritive action may extend to the nerve tissue. But whatever the rationale, the fact remains that very many of these neuropathic conditions will yield to the combined action of these remedies.

We are forced to the conclusion that opium and quinia are not so far "antagonistic that they should never be administered simultaneously," as maintained by Dr. Gubler.

ART. VI.—*Three Cases of Vesico-Vaginal Fistula, successfully treated by Sims' Method.* By J. MERCER ADLER, M. D., of Davenport, Iowa. (With five wood-cuts.)

CASE I. The entire history of this case is interesting; the writer is acquainted with all the circumstances connected with it. The patient, Joanna B., ætat. 21, was taken in labour with her first child on Tuesday, May 22d, 1860. She is a woman of below the ordinary stature, compactly built, and of sanguine temperament. The labour progressed slowly until Thursday, the 24th, when the regular medical attendant was called. On Friday, the 25th, at noon, I was called in consultation with Dr. M'Cortney to see her. The child was dead. The head was impacted in the pelvic cavity, the vertex presenting at the vulva. The cause of the obstruction to delivery was found to be too great curvature of the coccyx, which we subsequently learned to have been the result of a fracture of the bone from a fall in early life. Craniotomy was at once decided upon, and the child was extracted with the blunt hook introduced into the foramen magnum.

The woman subsequently did well. In a week she was up attending to her household duties. On Thursday, June 21st, while at work, she suddenly felt the urine trickling from the vagina. Up to this time she had regularly passed the urine without inconvenience, but having a slight diarrhœa in the morning, accompanied with some tenesmus, she attributed the difficulty to her straining while at stool. On visiting her the day following with Dr. M'C., and making an examination of the vagina, we found an extensive slough three-fourths of an inch in length by nearly half an inch in width, in the vesico-vaginal septum, its long diameter being transverse. The slough had only partially separated and could not be detached. The entire surface and edges were freely cauterized with nitrate of silver, a curved catheter introduced, and the patient put on her back, in the hope that as the slough separated, the granulating surfaces might repair the breach of substance and the opening be closed. This treatment was followed from day to day, but the slough finally separated, leaving an irregular hiatus about three-fourths of an inch in length by half an inch in breadth, its anterior edge semicircular, the posterior one irregular and wavy in outline, above the edge of which the mucous membrane of the bladder protruded. The case was evidently one to be remedied only by an operation, with a view to the preparation for which, the parts were occasionally touched with the caustic, well cleansed, and the patient's general health improved.

The case is remarkable so far in this respect, that the patient should have been going about, attending to her duties daily with such an extensive

amount of disorganization of the tissues of the vagina in progress, without being conscious of any uneasiness. The sloughing was doubtless the result of the long-continued pressure of the child's head against the pubic arch, causing arrest of circulation and consequent destruction of the vitality of the tissues. It may here be stated that during the whole time of labour the woman regularly evacuated the contents of the bladder.

On Saturday, August 4th, assisted by Drs. Witherwax and M'Cortney, the following operation was performed: the bowels had been well moved the evening previous. The woman being placed in position, and the speculum of Sims introduced, a silver catheter was passed into the urethra and pushed firmly against the fundus of the bladder so as to bring it as much on the stretch as possible and retract the protruding mucous membrane. The posterior edge of the fistulous opening being caught in the middle by a strong pair of toothed forceps and well lifted up, the point of a curved knife was thrust in under the hold of the forceps at the edge of the mucous membrane of the bladder, and brought out about a quarter of an inch beyond in the vaginal mucous surface. The edge of the knife was then steadily pushed along with a sawing motion, the hold of the forceps being changed occasionally so as to bring the parts on the stretch, until the corner or angle of the fissure was reached. The same process was repeated on the other side, and in a few minutes the edges were thus easily and thoroughly pared. The angles were clipped out with the curved scissors. A wad of linen wet with cold water was then introduced into the vagina and the patient laid on her side. In about ten minutes, all hemorrhage having ceased, three silver sutures were introduced and brought together. The apposition of the edges being satisfactory, the process of twisting the sutures to their places was performed. In twisting the one on the left an unfortunate accident occurred. Either from an imperfection in the wire, or from its being twisted too tightly, it gave way close to the loop of the suture. Fearing that it might possibly give way (although it held its place), an additional suture was introduced. The ends of the wires were brought together outside the vulva, secured in a piece of tape, and confined to the thigh. The whole time consumed, from placing the woman on her knees to the introduction of the catheter after she was placed on her back in bed, was just one hour. The catheter being introduced, half a teacupful of bloody urine escaped, but it soon became clear. Half a grain of morphiæ sulph. was administered and the patient left for the night, with directions to remove the catheter and wash it every two or three hours.

The patient passed a comfortable night, and during the following four days did well. The catheter was withdrawn every three or four hours and washed with diluted muriatic acid to prevent its being filled by the phosphatic deposit, which was quite abundant. On the fourth night and morning of the fifth day the patient suffered from severe headache, pains in the abdomen, nausea, and vomiting. Her condition became so alarming, apparently resulting from the want of action of the bowels, that it was deemed necessary to administer injections to move them. These were repeated several times without success. A bottle of solution of citrate of magnesia, well iced, was then given. It acted freely, and at once relieved the distressing nausea and headache. Subsequently there was no trouble. At the expiration of the ninth day an examination was made, and the union appeared perfect. Two of the sutures were removed. The remaining two were so deeply buried in the tissues that they were left until the following day. On the tenth day everything appearing firm, they were removed with

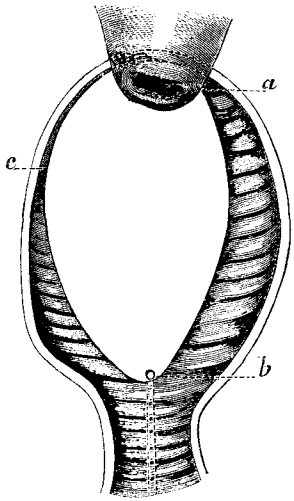
some difficulty from their imbedded positions, and we were gratified to behold a most perfect success.

The line of cicatrization was broad and firm, curved in outline to correspond with the anterior lip of the fissure. The bowels were moved by an enema, and directions given to remove the catheter every two hours for fifteen minutes at a time, during which the patient was to lie on the side. Her back was rubbed with spirits, the vagina syringed, the vulva well cleansed, and the slight abrasion of the internal labia powdered over with oxide of zinc. The catheter was from day to day suffered to be withdrawn for a longer time.

On the thirteenth day after the operation it was allowed to be withdrawn two hours at a time, and at the first effort to pass water without the catheter it flowed freely. From this time it was not again introduced. On the fifteenth day an examination was made; the vagina was found perfectly healthy in appearance, and the only trace of the fistulous opening left was a firm, solid cicatrix.

CASE II. On Tuesday, February 6, 1860, in company with Dr. P. Gregg, of Rock Island, Illinois, I visited Mrs. J. H. S., of Henry County, Illinois, with a view to an operation for her relief. On introducing the speculum of Dr. Sims, a most deplorable sight presented itself for our contemplation. From a point beginning about an inch from the meatus urinarius up to the os uteri there was an irregular oval hiatus, three and a half inches in length, and varying from one to two inches in width, through which a view was afforded of the entire cavity of the bladder. On the right there remained a considerable part of the vaginal septum, its edge ragged and partly cicatrized; on the left and above, the mucous membranes of the bladder and vagina seemed almost continuous, separated only by a broad line of cicatrization which finally lost itself in the cervix uteri. All support from the attachment of the vagina to the anterior segment of the cervix being lost, the os and cervix fell into and blocked up the fundus of the bladder.

Fig. 1.



An approximate idea of the appearance and extent of the fissure may be obtained from the accompanying figure (Fig. 1, one third the natural size), for the general outlines of which and method of representation I am indebted to the excellent drawings of Dr. Bozeman, accompanying his paper on the subject of Vesico-Vaginal Fistulæ, *N. A. Med.-Chirurg. Review*, vol. i. page 576.

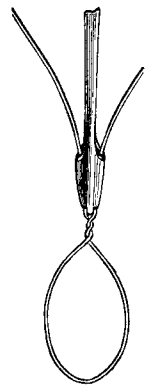
The case appeared to be an unpromising one, but, urged by the great anxiety of the patient, and having in our subject a young woman in perfect health, of strong and well-developed muscular fibre, cheerful disposition and regular habits, we determined to attempt an operation, and decided upon the following plan of procedure: First to unite the edges as far up as possible by transverse sutures, and subsequently, if in this we succeeded, to unite the triangular edge of the septum with the anterior lip of the os uteri.

The patient being placed in position, the process of paring the edges was begun at the point *a* (Fig. 1), and carried on continuously around as far as the point (*c*), leaving a broad bevelled edge pared nearly to the extent of half an inch in width. From the point (*c*) up to the cervix a deep groove was made in the tissues with a spade-shaped knife, being guided in making it by the line of cicatrization. The operation of paring the edges was tedious and painful, the hemorrhage being considerable and much obscuring the view. A large soft sponge was introduced into the parts, and the patient allowed half an hour's rest. Strong silver wire sutures were introduced at intervals of nearly half an inch. The points were carried full half an inch from the edge of the mucous membrane of the vagina, and as nearly as possible through at the edge of the mucous membrane of the bladder, and brought out at corresponding points on the opposite side. The introduction of the needles above was extremely difficult and tedious, requiring much manipulation on account of the contracted space afforded by the transverse field of the speculum.

Anticipating as we did a great amount of traction and strain upon the remnant of the septum, we deemed it best to introduce but seven sutures, and to include within the loop of each as much of the tissues as possible. The operation was much facilitated by moving the speculum from side to side, so as to expose only one edge of the fistula at a time. The loops of the sutures when removed measured from an inch to an inch and a half in length each.

Fig. 2.

Fig. 3.

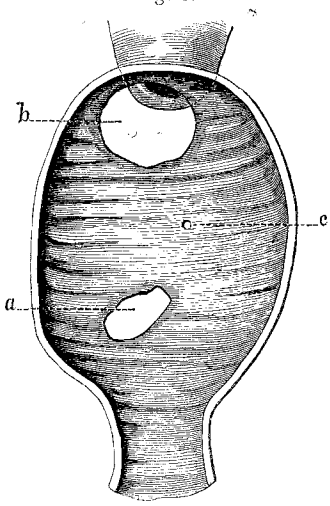


After a rest of half an hour, the parts were well sponged and cleansed, and the sutures twisted firmly to their places by means of the ingenious little instrument of Dr. Coghill (Figs. 2 and 3). The ends of the wires were twisted together and confined in the commissure of the thigh and vulva by a piece of tape passed round the thigh. The patient was placed on her back, and the sigmoid catheter of Dr. Sims introduced, through which flowed several spoonfuls of bloody urine with bubbles of air. The patient was left in the care of an experienced nurse, with proper directions as to the management of the catheter; a light diet enjoined, and sulphate of morphia to be administered to allay restlessness or check any disposition to evacuate the bowels.

Dr. Gregg visited her on the 8th; found her suffering from nausea, attributed to the morphia which she had taken. The urine, mixed with mucus and blood, continued to pass through the catheter and required its frequent removal. Dr. G. visited her the following day. Notwithstanding all precautions, her bowels had acted freely the night before. The urine flowed through the catheter with less hindrance. She was then left undisturbed until the 16th.

The result of the operation may be perceived by a glance at Fig. 4. The parts had failed to unite at the point (*a*), where there remained an opening as large as a bean, and above there was a large fissure bounded by the cervix uteri and the edge of the septum. This fistula appeared about an inch in length, and nearly of equal width.

Fig. 4.



Our operation had succeeded beyond expectation, and we were well pleased with the result.

On the 20th of March we again visited the patient, with the object of closing the lower opening (*a*, Fig. 4), preferring to complete the first stage of the procedure before attempting the closure of the upper fistula, one border of which was to be formed of the anterior lip of the os uteri. The operation was performed with three sutures introduced somewhat obliquely, and the patient was left with the customary directions for management. The sutures were removed on the 28th, union being perfect. The bowels were thoroughly evacuated by a dose of castor oil and an enema. Directions were given to draw off the urine every hour or two until the sphincter vesicæ recovered its tone, and she was able to pass water at will. She was soon able to be up, and retained the urine three or four hours at a time without uneasiness. April 9th was appointed for the final operation.

On making an examination the cicatrix appeared firm, and the entire parts presented a healthy and natural look. The cicatrix measured two and a quarter inches in length; it had contracted much, however, the line of coaptation of the edges at the first operation having been full three inches in length by actual measurement. An unexpected obstacle here presented itself, precluding the possibility of completing our operation as proposed. The cervix uteri was so completely incarcerated in the bladder, and so firmly held in its place there, that it was found impossible to lift it out, so as to form union with the anterior lip of the os. The body of the uterus was so much retroverted that all our attempts to introduce a sound into the uterine cavity, in order to lift the organ from the bladder, proved unsuccessful. In this emergency the simplest and easiest solution of the difficulty was to form union with the *posterior* lip, and thus imprison the os permanently within the bladder; an operation also very acceptable to the wishes of the patient from the fact of its precluding the possibility of the occurrence of pregnancy. The operation was, therefore, thus performed, five sutures being introduced. The sutures were removed April 16th, the parts having failed to unite.

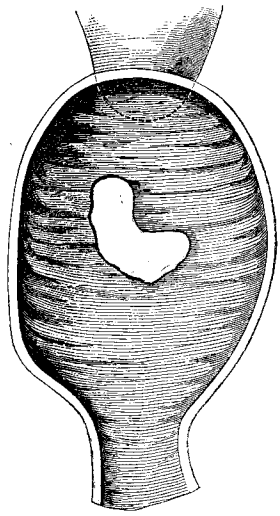
The condition of the patient and subsequent events fully accounted for the failure. The confinement from the previous operations, and the retention of the secretions in the prima via of a person of active and regular habits, was followed by great derangement of the entire nervous system. Obstinate constipation ensued. A slow irritative fever, with delirium, succeeded —the consequence of the absorption of vitiated secretions. The patient was

much debilitated and depressed; but under the judicious and vigilant care of her accomplished medical attendant, Dr. Gregg, she soon recovered. In May, the menstrual functions resumed their activity, and the patient menstruated through the bladder. Her condition was quite tolerable. The urine was retained without difficulty two or three hours while walking about—the uterus acting as a plug above, and blocking up in some measure the escape of the urine.

November 8th, the fistula was again closed with four sutures, and a minute opening (*c*, Fig. 4), discovered there for the first time, was also closed with a single suture. This minute fistula was doubtless formed by the dragging of one of the sutures in the first operation. The treatment of the patient was the same, with one exception, a plan adopted from the result of experience derived from the management of the first case here reported. Instead of giving opiates to restrain the action of the bowels, an enema was administered on the 10th, which, not operating, was followed by a dose of castor-oil. The bowels were freely moved on the 10th, 13th, 14th, 15th, and 16th, without the slightest unfavourable result, the patient being gently inclined to the side, the catheter retained in situ, warm enemata administered, and a bed-pan slipped under the buttocks. During the nine days of confinement her diet consisted of light, nutritious animal broths, &c. The sutures were removed on the 17th, union being complete and perfect. The tone of the bladder was soon restored, and in a few days the patient was about her household duties, entirely and perfectly cured.

On the 26th of December, we received from her husband the astounding intelligence that the woman was *pregnant!* Though almost incredible to us, still the evidence was so positive that we could not doubt the existence of the fact. The husband stated that for some days she had felt the motion of the fœtus, and that on the 25th, while walking about the house, she had felt certain violent movements, which were immediately followed by a recurrence of the leaking. On the 1st of January, while we were preparing to make a visit to the patient to verify the truth of the information we had received, and to determine what would be best to do under the circumstances, we received word that the woman had aborted. On visiting her a few days subsequently, we were informed that she had been suddenly seized with labour-pains, and that the fœtus was born in two hours, having reached apparently the end of the fifth month. The patient had menstruated in May and June, and had probably become pregnant after the latter month, impregnation having taken place through the fistulous opening.

Fig. 5.



The destruction of the septum was much less than we anticipated, the laceration having occurred lower down than the site of the recent opening, and being of an irregular curved shape (see Fig. 5), one and one-fourth inches in length by three-fourths of an inch in width. This opening was closed January 28th, by six sutures, two transverse, two longitudinal, and two oblique.

An enema was directed to be administered on the 30th, and repeated every second day. On Monday, February 4th, the seventh day after the operation, the patient began to menstruate, requiring the removal of the catheter, which was not again introduced, she being able to void the contents of the bladder at will. The sutures were removed on the 6th of February, exactly one year from the date of the first operation, the parts being perfectly sound, union complete, and most satisfactory in every respect. The patient got up immediately and began to attend to her domestic duties. The tone of the bladder was unimpaired, and she retains her urine without any difficulty or uneasiness, feeling in every respect, as she expresses herself, as well as ever.

CASE III. This patient, Mrs. P. M., aged about 20, was confined for the first time about two months previous to the time of my seeing her. The only account she could give of her case was that her labour had been a tedious one, complicated with a prolapse of the funis. She could, however, give no information as to whether instrumental means had been resorted to in effecting delivery. The main difficulty we had to contend against in operating was the extreme nervousness of the patient, the operation being much embarrassed thereby.

The fistule was about half an inch in length, situated an inch below the os uteri, in the median line, its shortest diameter being transverse.

On Tuesday, April 23d last (1861), assisted by Drs. Gregg and Baker, the operation was performed in the following manner: Both edges of the fissure were seized at the same time and approximated by a pair of strong forceps with toothed extremities, and the vaginal septum being well elevated so as to bring the parts on the stretch, the entire edge of the fistule was sliced off with the curved knife at a single sweep. The angles were then more accurately and thoroughly cut out with the curved scissors. A soft sponge was then introduced into the wound and the patient allowed fifteen minutes' rest. Four sutures of silver wire were then introduced transversely and twisted to their positions as in the preceding operations. The ends of the wires were confined together to the thigh by a tape, the catheter introduced, and the same general directions given for the management of the case, as before stated.

The catheter was removed about once in two hours, and the vulva well cleansed. The sutures were removed on Thursday, May 2d inst., union being complete. The line of cicatrization was pencilled with a stick of lunar caustic. The catheter was introduced every two or three hours, but on the second day after the removal of the sutures, the patient discontinued its use, the sphincter vesicæ having recovered its tone. Since then the patient has resumed her usual duties, and is in every respect well.

These cases are presented to the profession as an additional tribute to the already well-earned reputation of Dr. J. Marion Sims, to whose patient investigation and earnest zeal we owe the perfection of an operation, the failure to accomplish which with any degree of certainty was for a long time one of the opprobria of surgery. Through his skill and ingenuity, together with the contemporaneous investigations and experiments of his worthy and illustrious compeer Dr. Bozeman, we are now enabled, with assurance of success, to promise relief to those afflicted with this most serious and distressing lesion.

It may not be out of place here to bring prominently before the profes-

sion one or two practical points deduced from the history of the above cases. One of these is the non-necessity of observing a rule, so universally insisted upon by surgeons in these operations, namely, of restraining the action of the bowels during the whole period of confinement, usually nine to ten days. In many instances such a course must be attended with great inconvenience as well as some degree of danger. In the four cases (the other operated for in December, 1859) in which the writer has operated, the attempt to constipate the bowels has always been followed with unpleasant consequences. Another fact deduced from the result in the second case here reported, which, as far as the writer knows, is the most extensive vesico-vaginal fistula yet successfully operated upon, is the complete efficacy of the most simple and uncomplicated plan of operation, the use of the simple twisted silver (or other metallic) wire suture. It is fair to presume that if this operation has succeeded in a case of such extent and with such a great loss of substance, it will answer the purpose in any case.

The object should be to simplify our operative procedures as much as possible. Whatever is unnecessary and superfluous only complicates and delays. In the hands of such an accomplished and skilful surgeon as Dr. Bozeman the button suture doubtless is most successful; but for the large majority of those who may be called upon to treat such cases, the simpler the contrivance, if it answers the purpose, the better adapted it is to their wants.

After Dr. Bozeman, the object of some operators, who have turned their attention to this branch of surgery, seems to have been more to devise something new in the way of apparatus, no matter how complicated it may be and difficult of application, than to effect their purpose with the least difficulty and the most celerity. We think they are taking a step in the wrong direction, burdening the operation with useless incumbrances, and thus deterring many from undertaking what otherwise would, in ordinary cases, be a comparatively simple matter, by making it appear a very intricate and complicated one.

DAVENPORT, May 27, 1861.

ART. VII.—*Spina Bifida, treated by Iodine; Cure by one Injection.* By DANIEL BRAINARD, M. D., Professor of Surgery in Rush Medical College, etc.

November 7th, 1860, a girl three years old was brought to me to be treated for spina bifida. The child was intelligent, healthy, and well formed in every respect excepting the tumour situated over the sacrum. This was eight inches in circumference at the base, about two and a half inches in height, conical, translucent, elastic, and covered with healthy skin excepting a small point at the lower part where it was discoloured like the vestige of a nævus. Below the tumour there was an umbilicated depression like a cicatrix adhering to the sacrum.

Operation.—Nov. 10th, 1860, assisted by Prof. Ephraim, Ingalls and Dr. Edwin Powell, the operation was performed as follows: A small sized hydrocele trocar was carried into the tumour at its base on the right